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Circular  
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Engineering and Design  
PLANNING AND ENGINEERING COMPETENCY

1. Purpose. This circular establishes policy for maintaining planning and engineering competency in the U.S. Army Corps of Engineers (USACE).
2. Applicability. This circular is applicable to Headquarters USACE (HQUSACE), all major subordinate commands (MSCs), districts, Huntsville Engineering and Support Center (HNC), and Transatlantic Programs Center (TAC), and is applicable to all program areas.
3. Distribution. Approved for public release; distribution is unlimited.
4. References.
  - a. ER 5-1-10, Corps-Wide Areas of Work Responsibility
  - b. ER 5-1-11, U.S. Army Corps of Engineers Business Process
  - c. ER 690-1-1212, Professional Registration as a Selective Placement Factor
  - d. ER 1110-1-8158, Corps-Wide Centers of Expertise Program
  - e. ER 1110-345-100, Design Policy for Military Construction
  - f. Federal Acquisition Regulation (FAR)
5. Responsibilities.
  - a. Districts, HNC, and TAC. Districts, HNC and TAC will annually assess their planning and engineering competency in accordance with the principles and metrics in this circular, and make appropriate adjustments to their workload and workforce. This assessment will be documented in any suitable manner, or, for districts as directed by the MSC.
  - b. MSCs. MSCs are responsible for general oversight of the technical competencies of their subordinate districts and regional coordination of planning and engineering capabilities. MSCs will review the competency analyses conducted by their subordinate districts and provide

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comment and guidance as needed. MSCs will determine the necessary regional competencies and the need for regional technical specialists, and implement procedures to implement and maintain these regional capabilities.

c. HQUSACE. HQUSACE will determine the necessary national competencies and establish appropriate national experts and centers of expertise (see ER 1110-1-8158).

6. Need for Technical Competency. The USACE vision is to be the world's premier public engineering organization, dedicated to public service and responding to the Nation's needs in peace and in war. To fulfill this vision, USACE must attract and retain a world-class workforce and sustain technical excellence in a wide spectrum of engineering and scientific disciplines. USACE must maintain a strong in-house planning and engineering capability for the following reasons:

a. *To serve the public interest and ensure public safety*. These are the overriding responsibilities of USACE employees as public servants (see ER 5-1-11). While contractors are held responsible for the technical adequacy and safety of their products and services, only Government employees can perform inherently governmental functions (see FAR Subpart 7.5) such as determining policies and standards, setting program priorities, defining requirements, and awarding and administering contracts. Hence, USACE personnel must be technically competent in order to make sound planning and engineering decisions that effectively and economically solve problems, while ensuring public safety and environmental sustainability.

b. *To execute planning, design and construction programs and ensure quality*. As stewards of public funds and trust, USACE must have the requisite technical proficiencies in a broad range of engineering and scientific disciplines to successfully oversee and execute its many missions and to deliver quality products and services. USACE personnel must determine project objectives, prepare statements of work, determine appropriate criteria, set budgets, evaluate alternatives, direct and manage contracts, decide the adequacy of products and services, and other essential functions.

c. *To respond to emergencies and military contingencies*. USACE is called upon by the Army and the Department of Defense to support military contingency operations, and by the Nation to respond to natural disasters and other civil emergencies. The Corps must maintain a broad base of technical talent to allow it to respond rapidly to these urgencies, both through the use of in-house personnel and through the award and management of private sector contracts.

d. *To respond to unanticipated and urgent requirements*. With a highly capable in-house staff and the use of agile contracting methods, USACE can immediately start work on an urgent project or activity.

e. *To provide national expertise in specialized areas*. USACE invests in innovative technology and maintains vital national expertise in many technical areas such as force

protection, basin-wide hydrologic system modeling, navigation design, ecosystem assessment and restoration, unexploded ordinance clean-up, specialized concrete technologies, and cold regions engineering. This knowledge is shared with the private industry and made readily available to the public in many forms such as computer software, publications and consultation.

f. *To sustain technical leadership.* USACE must develop and sustain a pool of highly qualified technical personnel to fill leadership positions in project management, engineering, planning, construction, acquisition and other key areas. Leaders and managers must have substantial technical knowledge and experience in order to make sound decisions and properly protect the public interest.

7. Role of the Private Sector. USACE and the private industry must work in partnership to address the Nation's infrastructure problems. USACE relies heavily on the talents and capabilities of private planning, surveying, mapping, architecture, engineering, and environmental firms to accomplish its many and varied missions. USACE will use the private sector to the maximum extent possible for the production of planning and engineering products, consistent with the objective of sustaining USACE in-house technical competency, and for specialized expertise that is not available in USACE. USACE should avoid taking on missions that could be perceived as competing with the private sector. Partnership, not competition, is the objective in USACE's relationship with the private industry.

8. Factors Influencing Planning and Engineering Capability. There are many factors that currently influence planning and engineering competency in USACE:

- a. Increasing pressures to contract out and privatize, such as the Federal Activities Inventory Reform Act<sup>1</sup>.
- b. Shortage of skilled technical workers.
- c. Technology revolution, which increases productivity but requires higher skill levels.
- d. Government downsizing, resulting in the need for higher efficiency and more outsourcing.
- e. A mature workforce that is retiring, with the attendant loss of experience and corporate memory.
- f. Congressional and customer demands for alternate acquisition methods, such as design-build and best-value source selections. Technical personnel must have the appropriate skills to support these non-traditional acquisitions.

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<sup>1</sup> Requires identification of activities performed by Government employees that are not inherently governmental functions.

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- g. Increased customer demands for quality, flexibility, responsiveness, and cost-effectiveness.
- h. New missions and customer needs, requiring new capabilities such as environmental protection, restoration, and sustainability.
- i. Fluctuating workload, especially for military programs, which requires a flexible and adaptable workforce that is not overly dependent on in-house performance of planning and engineering work.
- j. The regional business center, which shifts the focus from the capabilities of individual districts to the aggregate capabilities of an MSC.
- k. Pressures to control overhead costs, including limitations on training.

9. Principles for Maintaining Planning and Engineering Competency. USACE must have a planning and engineering workforce that is flexible and responsive, has broad experience, and is highly skilled to meet today and tomorrow's challenges. The following principles regarding workload planning and workforce development should be followed to ensure USACE maintains adequate planning and engineering capability:

a. Workload Planning. Planning and engineering workload must be managed on a regional basis to fully utilize and sustain USACE technical competencies and maximize effectiveness. USACE must also effectively leverage the extensive capabilities and expertise of the private sector. In particular, subordinate commands must:

(1) Identify the core competencies that must be maintained at each district or center and in each region to successfully execute all USACE missions and sustain national technical leadership.

(2) Perform appropriate and sufficient work in-house to sustain core competencies, and develop new competencies that are vital to the Army and the Nation's changing needs.

(3) Broker out specific disciplines and/or types of work to other qualified USACE organizations, other Federal agencies and academic institutions when sufficient in-house expertise cannot be viably sustained at a district, center or region. (See ER 5-1-10.)

(4) Maximize the use of regional technical specialists, national experts and centers of expertise to leverage the full capabilities of USACE. Also, these positions provide important opportunities for career advancement.

(5) Contract with private planning and engineering firms for most production work beyond that needed to train and develop USACE personnel, and for specialized expertise not available in USACE. Encourage the private sector to maintain the competencies and capabilities needed to

support USACE programs.

(6) Provide a reasonable balance of in-house work performance and management and review of contracted work to give personnel a variety of assignments, and enhance their development.

(7) Emphasize the inherently governmental functions that USACE can perform for customers, such as determining requirements, selecting appropriate acquisition methods to achieve desired technical results, and evaluating the suitability of alternative solutions.

(8) Provide responsive engineering support to ongoing construction projects to ensure that design products are practical and constructable.

b. Workforce Development. The USACE planning and engineering workforce must be developed to ensure that each person reaches a high level of technical competency and professional achievement, and that this knowledge is shared across the organization. In particular, subordinate commands must:

(1) Serve the public interest by having appropriately trained and highly experienced personnel make key governmental decisions, such as determining environmental and quality requirements, evaluating the adequacy of contracted products and services, and determining the reasonableness of contract costs and schedules.

(2) Ensure public safety by having appropriately trained and highly experienced personnel prepare and approve technical products, assure compliance with professional standards and criteria, perform essential technical services, and make critical operational decisions.

(3) Use a wide range of recruiting methods, as well as the Student Career Experience Program ("co-op" program) and the Department of Army intern programs, to attract talented personnel in needed professional disciplines.

(4) Promote professional development through training, education (including advanced degrees), mentoring, and developmental assignments within and outside USACE.

(5) Encourage professional registration (see ER 690-1-1212) and certification, and support participation in professional associations and organizations.

(6) Recognize the accomplishments of team members and provide the maximum possible opportunities for advancement to the journeyman and expert levels.

(7) Cross-train personnel in various types of work to provide the flexibility to meet changing missions, workloads and customer requirements.

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(8) Do a sufficient amount and good variety of less complex work to attract new personnel, and to train and develop them to the journeyman level.

(9) Do a sufficient amount of varied, complex and challenging work to expand the expertise of journeyman-level personnel and promote their professional growth.

(10) Continually review needed skills and capabilities and projected personnel losses to ensure competency is maintained.

#### 10. Metrics.

a. Quantitative Guidelines. The following current policies governing the balance of in-house and contracted planning and engineering work remain in effect. These guidelines should be applied at the MSC level consistent with the regional business center concept.

(1) Military. Design approximately 25 percent of the military program (across all fund sources) in-house in accordance with ER 1110-345-100, para. 6.m(2).

(2) Superfund. Design no more than 10 percent of the Superfund program (executed for the Environmental Protection Agency) in-house in accordance with ER 1110-345-100, para. 6.m(3).

(3) Civil Works. Contract with the private sector for at least 30% of the planning, engineering, and construction phase services for the civil works program<sup>2</sup>. This computation is based on expenditures in the Cost of Doing Business Report<sup>3</sup>.

b. Qualitative Indicators. Commands should identify and track appropriate measures to assess the status and capability of their planning and engineering workforce and the quality of their work, such as:

- (1) Vacancy and turnover rates in core competency areas
- (2) Retirement eligibility
- (3) Average years experience
- (4) Average grade
- (5) Professional registration
- (6) Advanced degrees

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<sup>2</sup> Established by CECW-ZA memorandum, 29 March 1999, subject: Civil Works Private Sector Contracting Targets for Planning, Engineering, Design, and Construction Phase Services Work – Fiscal Year 1999.

<sup>3</sup> Complete details of the Cost of Doing Business Report and the computation of the private sector contracting percentage can be found at the following website:  
<ftp://ftp.hq.usace.army.mil/CODB/documentation/>

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- (7) Membership in local and national professional societies and associations
- (8) Membership in USACE-wide and Government technical groups
- (9) Training
- (10) Teaching
- (11) Customer satisfaction surveys and feedback
- (12) Design and construction quality assessments
- (13) Design deficiencies during construction
- (14) Construction time and cost growth
- (15) Planning and design awards
- (16) Execution goals
- (17) Design costs as a percentage of construction cost
- (18) Ratio of in-house work to quality assurance reviews of contracted work

FOR THE COMMANDER:



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